In brief, an image projection and display device according to the present invention comprises the following:

a plurality of projectors;

a projection screen forming a focusing plane for projected images from the plurality of projectors, mutually overlapping regions existing between the images;

a test image storing section for storing prescribed test images;

an image capturing section for acquiring projected test images wherein a prescribed test image is projected onto the projection screen respectively by each of the projectors;

a correction data calculating section for calculating correction data for correcting the input images for the respective projectors, on the basis of the acquired test images, in such a manner that a target brightness is achieved across the whole projection area including the overlapping regions;

a correction data storing section for storing the correction data thus calculated; and

an image correcting section for correcting the images input to the respective projectors, by using the correction data.

Replace the paragraph starting at page 4, line 24 with:

These objects and advantages of the present invention will become further apparent from the following detailed explanation.

Replace the paragraph starting at page 7, line 15 with:

As illustrated in Fig. 2, this image projection system comprises, in general terms: a personal computer 1 forming an image generating section for generating fine image data; a controller section 2 for processing, dividing and outputting the fine image data from the personal computer 1 in accordance with a plurality of projectors used (in Fig. 2, four projectors), and also correcting the projected screen image on the basis of a captured image, with respect to each of the divided outputs, in such a manner that it achieves a target brightness across the whole projection area thereof including the superposed regions (overlapping regions); a plurality of projectors 3a - 3d; and an image capture section 5, such as a digital camera, or the like, for capturing a test image, or the like, projected on a screen 4. For the aforementioned projectors 3a - 3d, a liquid-crystal projector or DLP device (abbreviation for Digital Light Processing, a digital projection technique based on a DMD (Digital Micromirror Device), which is an optical semiconductor).

Replace the paragraph starting at page 8, line 7 with:

In a composition of this kind, the fine image data created and output by the personal computer 1 is output to the controller section 2. The controller section 2 determines which portion of the fine image data is to be output to which of the respective projectors and it performs correction processing with respect to each projector image, by using correction data, in such a manner that a target image brightness is achieved across the whole projection area, including the overlapping regions. To obtain the required correction data, a test image is

previously projected from the projectors onto the screen 4, that projected image is captured by means of an image information gathering camera 5, and the correction data is created on the basis of the captured image data. The method for calculating the correction data is described below.

Replace the paragraph starting at page 10, line 1 with:

In the image projection and display device described here, it is supposed that the color differentials and gamma characteristics have previously been corrected between the respective projectors, whereupon the brightness of the projected images is corrected by the image correcting section 13 in such a manner that a target brightness is achieved over the whole projection area, including the overlapping regions.

Replace the paragraph starting at page 10, line 8 with:

The corrected image data for each projector is converted to an analog signal by a D/A converting section (not illustrated), and then supplied to the respective projector (3a - 3d) of the projector section 14. The respective projector images are then projected onto the screen 4 by the respective projectors (3a - 3d). The test image storing section 15 stores a test image which is a monotone image of a neutral grey or white tone, that is projected from the respective projectors. The aforementioned correction data is determined by projecting the test image read out from the aforementioned test image storing section 15 onto the screen 4, capturing the projected test image by means of an image capturing section

5, such as a digital camera, or the like, and then calculating correction values, in the correction data calculating section 16, for correcting the input images to each projector so as to achieve a target brightness in the whole projection area including the overlapping regions, on the basis of the captured image data. The calculated correction data is stored in the correction data storing section 17. A method for calculating the correction data in the correction data calculating section 16 is described hereinafter.

Replace the paragraph starting at page 11, line 9 with:

The aforementioned test image storing section 15 stores a grey or white test screen for correcting the brightness of the whole projection area of the screen. However, provided that the respective R, G, B color differentials and gamma characteristics of the respective projectors have already been corrected, then a color, such as R, G, or B may also be used as a test image. However, since it is considered that there will always remain some degree of difference between the R, G, B color characteristics of the projectors, it is desirable that grey or white light which contains all three colors, R, G, B, is used for correction. When using a light shield to perform approximate correction of the brightness of the overlapping regions, it is also necessary to store a test image comprising a black image for correcting the bias of the images produced by the projectors (even when a black input signal of level 0 is input, the projected images do not turn completely black, and their residual brightness (or "offset" amount) in this case is termed the "bias").

Replace the paragraph starting at page 16, line 24 with:

In other words, a target value for the brightness across the whole screen area is set, and correction for achieving that target value is applied, while the image actually projected onto the whole screen is captured, and hence it is possible to equalize any form of brightness irregularity across the whole screen area.

Replace the paragraph starting at page 17, line 4 with:

Firstly, a method for calculating correction data to achieve uniform brightness across the whole projection area including the overlapping regions is described with reference to Fig. 6.

Replace the paragraph starting at page 17, line 17 with:

In Fig. 6, the horizontal axis indicates the projection region on the screen 4, and the vertical axis indicates brightness (luminosity). Curve A is the luminosity change of projector 3a and curve B is the luminosity change of projector 3b. The respective luminosities of curves A, B indicate the reduction in the quantity of light in the overlapping region due to the effects of the light shields. Curve C indicates the measured brightness of the overlapping region. Furthermore, curve (e.g., line) H indicates a target brightness value, for achieving uniform brightness in the projection area. This target value H is, for example, an average value of the brightness calculated by the correction data calculating section 16 on the basis of image data for the

whole projection area as acquired by the image information acquiring camera 5.

Replace the paragraph starting at page 18, line 16 with:

Next, a method for calculating correction data to achieve continuous brightness in the whole projection area including the overlapping regions is described with reference to Fig. 7.

Replace the paragraph starting at page 23, line 22 with:

In the composition according to this second embodiment, since the method for calculating the correction data by projecting test images diverges from the method employed in the first embodiment, it is explained here with reference to the flowchart in Fig. 11, centered on the operation for creating correction data.

Replace the paragraph starting at page 25, line 21 with:

As described above, by means of the image projection and display device according to the respective embodiments, in realizing a seamless large screen using a plurality of projectors, it is possible to make the interfaces between the overlapping region and non-overlapping regions, as well as the overlapping regions themselves even less conspicuous, and hence a more seamless, finer and higher quality projected image can be achieved.